What is claimed is:

1. A method of measuring traffic volume from a plurality of ingress points to a plurality of egress points in a network, the method comprising:

    collecting link load measurements on links between the ingress points and the egress points;

    constructing a gravity model of link to link traffic utilizing the link load measurements to capture an overall distribution of the volume of traffic between the ingress points and the egress points; and

    finding a traffic matrix that minimizes a distance metric subject to tomographic constraints to an initial tomographic solution based on the gravity model, the traffic matrix further comprising elements that specify the traffic volume from the plurality of ingress points to the plurality of egress points in the network.

2. The method of claim 1 wherein the initial tomographic solution is modified to remove empty demands based on simulations of routing in the network.

3. The method of claim 2 wherein simulations are run only on routes that are not topologically equivalent.

4. The method of claim 3 wherein the ingress points and the egress points are border routers in an Internet Protocol (IP) backbone network.

5. The method of claim 4 wherein the gravity model differentiates between customer and peering traffic in the IP backbone network.

6. A computer readable medium comprising executable instructions for performing a method of measuring traffic volume from a plurality of ingress points to a plurality of egress points in a network, the method comprising:

collecting link load measurements on links between the ingress points and the egress points;

constructing a gravity model of link to link traffic utilizing the link load measurements to capture an overall distribution of the volume of traffic between the ingress points and the egress points; and

finding a traffic matrix that minimizes a distance metric subject to tomographic constraints to an initial tomographic solution based on the gravity model, the traffic matrix further comprising elements that specify the traffic volume from the plurality of ingress points to the plurality of egress points in the network.

7. The computer readable medium of claim 6 wherein the initial tomographic solution is modified to remove empty demands based on simulations of routing in the network.

8. The computer readable medium of claim 7 wherein simulations are run only on routes that are not topologically equivalent.

9. The computer readable medium of claim 8 wherein the ingress points and the egress points are border routers in an Internet Protocol (IP) backbone network.

10. The computer readable medium of claim 9 wherein the gravity model differentiates between customer and peering traffic in the IP backbone network.